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30 January 2006

EX PARTE PRESENTATION

The Honorable Kevin Martin
Chairman
Federal Communications Commission
445 12th Street, S.W.
Washington, DC 20554

The Honorable Michael Copps
Commissioner
Federal Communications Commission
445 12th Street, S.W.
Washington, DC 20554

The Honorable Deborah Tate
Adelstein
Commissioner
Federal Communications Commission
445 12th Street, S.W.
Washington, DC 20554

The Honorable Jonathan
Commissioner
Federal Communications Commission
445 12th Street, S.W.
Washington, DC 20554

Re: Ex Parte Presentation ET Docket No. 00-258; IB Docket No. 02-364

Dear Commissioners:

Lucent Technologies Inc. ("Lucent") submits this *Ex Parte* presentation regarding the potential interference from ISM Devices into the BRS-1 Band of the newly realigned BRS/EBS spectrum. Lucent, as a manufacturer of wireless infrastructure, is interested in supplying its carrier customers who have licenses in this band with technology that provides the quality of service these carriers demand. Accordingly, it is of considerable interest to Lucent that the service rules for BRS/EBS adequately mitigate the potential for interference into the BRS/EBS frequencies.

Lucent supports the proposal set forth by Sprint/Nextel and endorsed by Motorola, in which they suggest limits on the (in-band) emissions generated by ISM devices that fall into spectrum common to the ISM band and the BRS-1 channel (i.e., 2496-2500 MHz). Specifically, Lucent has reviewed the analyses provided in the *Ex Parte* submissions offered by Sprint/Nextel and Motorola on October 3, 2005

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and December 14, 2005, respectively. Lucent finds these studies credible and accurate.

It is well understood that it is advantageous, if not necessary, to understand the RF environment and, therefore, the potential for interference in any spectrum of interest. The

current (Part 18) rules, which place no limit on the in-band emissions of ISM devices present an uncertain and potentially difficult situation for service within the BRS-1 channel. The lack of any emissions limit is especially problematic as ISM devices, particularly microwave ovens, may be located in close physical proximity to BRS customer premises equipment (CPE) receivers operating in the BRS-1 channel and, as a consequence of that proximity, present a serious interference risk.

The Motorola and Sprint/Nextel studies calculate the minimum distances that must exist between an interfering ISM device and a BRS CPE receiver operating in the BRS-1 channel. The studies are based upon a level of interference that might be “acceptable” for BRS CPE operation. In its study, Motorola identifies two criteria: (1) that the impact of the interference degrades the receiver noise floor by 1 dB, and (2) that the impact of the interference degrades the receiver noise floor by 3 dB.

The one dB degradation criteria translate to an allowable interference power approximately 6 dB below the noise floor, specified in the Motorola analysis as –107.9 dB.¹ Knowledge of the average microwave power generated in the 2496-2500 MHz band, as identified in the referenced NTIA study, allows the calculation of the additional loss required to meet the assumed interference criterion. Finally, Lucent agrees with Motorola that a 30 dB/decade (of distance) propagation loss model is appropriately used to determine the separation between interferer and victim necessary to provide the desired additional attenuation. The results indicate that separation between the interfering microwave oven and the victim BRS CPE receiver (operating in the BRS-1 band) should be about 107 meters, or between about 40 and 80 meters, when additional wall attenuation of 12 dB and 3.4 dB is considered.

Sprint performs a similar analysis to arrive at required separation distances between an interfering microwave oven and victim BRS CPE receiver (operating in the BRS-1 channel) of from 27 to 478 meters, dependent on the consideration of additional wall attenuation (25 to 0 dB).

Clearly, such separation distances would be difficult to achieve in the real world, presenting the significant possibility that the BRS-1 channel would be prone to poor performance or, in the extreme, that this channel would be unusable. The Sprint/Nextel proposal to mitigate this situation through the imposition of ISM emission limits for this band (2496-2500 MHz) is therefore reasonable and proper. As the Commission knows, this proposal would limit ISM emissions in the 4 MHz of

¹ Based upon an assumed receiver noise floor of –102 dB



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spectrum common to BRS and ISM use to those limits already imposed on out-of-band ISM emissions above 2500 MHz, as specified in Part 18.305(b) of the Commission's Rules.

Implementation of these requirements, given in the Rules for ISM devices with output power of greater or less than 500 watts, would result in significantly reduced required separation

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distances. In fact, the reductions derived in both the Motorola and Sprint/Nextel studies are in excess of 55%. Lucent agrees with these results.

Lucent further concurs that the suggested implementation of the proposal on only new ISM devices, and the grandfathering of devices marketed on or before December 31, 2006 should ease any burden that might be incurred by the ISM device industry.

In summary, Lucent strongly supports modification of the Commission's Part 18 rules consistent with the Sprint/Nextel proposal for ISM emission limits in the 2496-2500 MHz band.

Respectfully submitted,

/s/ Robert B. Hirsch

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Lucent Technologies Inc.